

DRAFT

# Town of Cape Elizabeth Cape Elizabeth Public Schools

School Building Advisory Committee Presentation  
Cape Elizabeth, Maine

December 21, 2023

# Harriman



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# Agenda

1. Report - format and table of contents
2. Informing Options - Operational recommendation clarifications
3. Survey - Integration of survey data into design work
4. Space – Oversized, undersized and spaces
5. Energy - School department utilities and usage
6. Next Steps



# Report format and table of contents



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# REPORT FORMAT | TOC

- 1 Project Goals & Priorities
- 2 Facilities Needs Assessment
- 3 Educational Programming
- 4 Summary of Other Reports



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| Facilities Efficiencies Recommendations  | XX |
| Facilities Operations Recommendations    | XX |



**OPTIONS**

**draft**

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| 5   FACILITIES RECOMMENDATIONS           |    |
|--|----|
| Facilities Repair Recommendations Matrix | XX |
| Facilities Efficiencies Recommendations  | XX |
| Facilities Operations Recommendations    | XX |

















































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# Operational recommendation clarifications | Review of Possible Options































































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Possible Options: **Based on the Prioritized Needs**

|                                    | Option A<br>"Repair"  | Option B<br>"Reno/Add"  | Option C<br>"Reno/Add"  | Option D<br>"Reno/Add"  | Option E<br>"Reno/Add"   | Option F<br>"Master Plan"   | Option G<br>"New School"  |
|------------------------------------|---|---|---|---|--|---|---|
| Repairs                            |  |  |  |  |   |    |    |
| Security Improvements              |   |  |  |  |   |    |    |
| Healthy Building                   |   |  |  |  |   |    |    |
| Gathering & Collaboration Hubs     |   |  |  |  |   |    |    |
| Cafeteria Improvements             |   |   |  |  |   |    |    |
| Agile/Flexible Classrooms          |   |   |   |  |   |    |    |
| Layout Modification                |   |   |   |  |   |    |    |
| Outdoor Learning & Play            |   |   |   |   |   |    |    |
| Efficiency Upgrades                |   |   |   |   |  |   |   |
| New ES or MS                       |   |   |   |   |  |  |   |
| Plan for Future School Replacement |   |   |   |   |  |  |  |
| New ES/MS                          |   |   |   |   |  |   |  |

# “Revised” Possible Options: Based on the Prioritized Needs

|  | Option A<br>“Repair”  | Option B<br>“Reno/Add”  | Option C<br>“Reno/Add”  | Option D<br>“Reno/Add”  | Option E<br>“New School”  | Option F<br>“New School”  | Option G<br>“New Schools”   |
|--|---|---|---|---|---|---|---|
| Repairs  |    |    |    |    |    |    |    |
| Efficiency Upgrades  |   |    |    |    |    |    |    |
| Security Improvements  |   |    |    |    |    |    |    |
| Healthy Building   |   |    |    |    |    |    |    |
| Gathering & Collaboration Hubs   |   |    |    |    |    |    |    |
| Cafeteria Improvements   |   |   |    |    |    |    |    |
| Agile/Flexible Classrooms  |   |   |    |    |    |    |    |
| Layout Modification  |   |   |   |    |    |    |    |
| Outdoor Learning & Play  |   |   |   |   |   |   |   |
| New ES   |   |   |   |   |   |  |  |
| New MS   |   |   |   |   |  |   |  |
| Master Plan - Plan for Future School Replacement and /or modifications |  |  |  |  |  |  |  |

# Operational Recommendations

Based on the goals and priorities outlined for the project from numerous stakeholder groups the following categories have been identified as operations recommendations to be considered in renovation / addition and new build options.

These categories are further defined on the proceeding pages **based on the community survey, educational program, programming, educational visioning, community input, SBAC input, community forums, and the design language.** The items indicated are for all schools unless noted otherwise. Some items apply fully or partially depending on the existing conditions, but the priority remains.

**The are listed in priority order:**

- 1. Security Improvements**
- 2. Healthy Building**
- 3. Gathering & Collaboration Hubs**
- 4. Cafeteria Improvements**
- 5. Agile/Flexible Classrooms**
- 6. Layout Modification**
- 7. Outdoor Learning & Play**



# Operational Recommendations

## 1. SAFETY AND SECURITY IMPROVEMENTS

- **Comprehensive approach to Safety and Security** (to be reviewed by district, policy, fire and police)
- **Clear Main Entry adjacent to Main Office** (suite style office with hardened transaction window and nurse area with shower, exam rooms, and storage)
- **Clear sight lines of the parking areas and drop off from main entry.**
- **Secure Vestibule**
- **Separate Public and Private spaces to ensure safe community access.**
- **Compartmentalization of school**
- **Zoned public address system.**
- **Separate public address system for PC and MS.**
- **ES/MS: Food deliveries not through school**
- **Monitoring of exterior doors**
- **Additional cameras, if deemed necessary**
- **Additional key card access, if deemed necessary**
- **Flooring replacement in classrooms** (no vision zones)
- **Door and hardware replacement, as necessary.**
- **Clear wayfinding**
- **Sense of belonging**
- **Fire alarm upgrades** (if mandated by authorities = repair)
- **Site:**
  - **Bollards to prevent traffic from driving up onto sidewalk or into entrance.**
  - **Lighting**
  - **Pedestrian and vehicular flow – very congested** (safety improvement)

# Operational Recommendations

## 2. HEALTHY BUILDING IMPROVEMENTS

- Address acoustic deficiencies. Sound transfer between spaces, HVAC, Cafeteria, Music, etc.
- Address deficient HVAC: focus to improve thermal comfort and IAQ.
- Explore full building cooling.
- Increase Daylight and connection to the outside.
- Outdoor learning spaces.
- Install dimming controls for new lighting.
- Address any water infiltration (move to repairs)
- Abate hazardous materials (beyond friable materials) (friable should be addressed in repairs)
- Address plumbing fixtures above State Lead requirements
- Place to go when stressed (wellbeing)
- Inadequate spaces- not appropriate / healthy space allocated for the following program/ use (those indicated as undersized in the Space Allocation Workbook (SAW) should be considered as well):
  - ES:
    - STEM/makerspace for tech integrator
    - Separate space for Extended Learning Strategist and World Language.
    - Gifted and Talented
    - Behavioral Analyst
    - 2-3 conf rooms for IEP
    - 1:1 meeting space with students (elev. lobby)
    - Response to Intervention suite (student help with math / Single user restrooms / restrooms in PK/K and 1
  - o

# Operational Recommendations

## 2. HEALTHY BUILDING IMPROVEMENTS (CONT.)

- **MS:**
  - **Tech Integration Teacher** (currently in circulation space)
  - **STEM/Kitchen/Industrial Arts Space**
  - **Appropriate space for Music Programs** (acoustics/ storage/etc.)(71% of students involved in Band)
  - **All bathrooms upgraded** (single full length stalls)
- **HS**
  - **Two teachers share one classroom** (confirm that they do or do not overlap)
  - **Need large space for testing (nowhere in district)**
  - **Student gathering and collaboration area** (SEL/ sense of place)
  - **All bathrooms upgraded** (single full length stalls)
  - **Locker room upgrades, weight room** (very small), **trainers room** (very small)
  - **Gym floor**

## 3. GATHERING & COLLABORATION HUBS

- **“Improved Sense of Place”**
- **ES/MS: Within Classroom Neighborhoods** (create a sense of place and belonging within each grade level or middle school team) (1 to 2 classes)
- **Pull over spaces / small group within corridor.** (3-4 people)
- **Large group / assembly** (grade level- different than ES/MS Cafetorium and HS cafeteria)
- **Consider within entry/ lobby spaces** (dual purpose spaces)
- **Spaces to contain:**
  - **Display space**
  - **Technology**
- **Library / learning commons upgrades** (flexible furniture for staff meeting, technology)
- **Conference rooms** (IEP, staff meetings, etc)
- **ES - 2-3 additional needed for IEPs as they can only be done on zoom.**

# Operational Recommendations

## 4. CAFETERIA IMPROVEMENTS

- **ES/MS: Separate eating space for ES and MS**
- **ES/MS: Address auditorium function and access** (collaboration/ gathering hub- needed for Performing Arts, need to bring class in during day)
- **ES/MS: Kitchen upgrades** (address separate eating spaces, different levels)
- **ES/MS: Address deliveries if not already** (see security)
- **Satellite dining areas** (for those over stimulated by large space)

## 5. AGILE FLEXIBLE CLASSROOMS - (identified as an ES/MS priority)

- **Define if larger size needed or access to break out space for group work. – define min. size needed for flexible class/collaboration and need access to external collaboration space** (define low end threshold)
- **Flexible furniture**
- **Moveable / flexible storage**
- **Proper storage**
- **Technology upgrades** (support presentations, videos, etc.)
- **Design with moveable walls between classrooms/adj spaces** (non-loading bearing between) (explore modern version of moveable wall)

# Operational Recommendations

## 6. LAYOUT MODIFICATION

- **Clear wayfinding** (if not addressed in safety and security)
- **ES/MS: Reduce sprawling nature of classroom wings.**
- **Clear delineation of private and public space** (safety and security as well)
- **Developing the “heart of each school”** (paramount to this effort)
- **ES - Single user restrooms / restrooms in PK/K and 1**

## 7. OUTDOOR LEARNING & PLAY

- **MS access and use of existing courtyards**
- **ES outside gym space**
- **Easily supervised.**
- **Covered outdoor areas.**
- **MS play area away from street**
- **HS Bathrooms at Hannaford Field**

# Integration of survey data into design work



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# Integration of Survey Data into Design Work

The design process is addressing the above findings in the following ways:

## Cost:

- Cost is a consideration that will need to be evaluated throughout the process in context of the scope of work, project goals and short and long term impact of various options.
- We plan to address this through the process of exploring a number of options.
- The options vary from repair, renovation/add to replace and will identify various cost and scope that address various levels of project goals and priorities.
- This will provide data to allow stakeholders to make informed decisions.

## Size:

- The current enrollment study shows an 8.6% increase over the next 10 years across all grades with the highest increase in the ES/MS grades. Refer to the enrollment projection study summary in section 4 Summary of Other Reports.
- An evaluation of general classroom and core space needs based on projected enrollment is included in the facility assessment. Refer to the Space Allocation Workbook (SAW) summary in section 3 Programming.
- The size of the solution will need to balance the need for program space and projected student population.
- Note that new buildings are typically more efficient in square footage per student when compared to renovation / addition projections as they are working with existing project constraints.

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- The options vary from repair, renovation/add to replace and will identify various cost and scope that address various levels of project goals and priorities.
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## Size:

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- The size of the solution will need to balance the need for program space and projected student population.
- Note that new buildings are typically more efficient in square footage per student when compared to renovation / addition projections as they are working with existing project constraints.



# Integration of Survey Data into Design Work

The design process is addressing the above findings in the following ways:

## Renovation and New Construction:

- The various options will explore several renovation and new construction options in addition to repair and new build and new build options.

## Physical Structure and functionality of existing structures: the addresses the top concerns of respondents concerned about this by:

- **Disrepair/deterioration:** This is addressed in the “repair recommendations”.
- **Security concerns:** This conclusion supports the priorities of Safety and Security and Healthy Building outlined in the “operations recommendations”.
- **Age:** This conclusion supports the priorities of Safety and Security and Healthy Building outlined in the “operations recommendations”.
- **Leaking roofs:** This is addressed in the “repair recommendations”.

## Physical Structure and functionality of existing structures: ( Cont.)

- **Safety concerns:** Is addressed in the priorities of Safety and Security and Healthy Building outlined in the “operations recommendations”.
- **Insufficient classroom / program space:** This is addressed in the “healthy building” priority outlined in the “operations recommendations”.
- **Inadequate HVAC:** This is addressed in the “healthy building” priority outlined in the “operations recommendations” and “repair” and “efficiency recommendations.”

**Safety and Security Standards:** Is addressed in the priorities of Safety and Security and Healthy Building outlined in the “operations recommendations”.

**Music / arts programs:** This is addressed in the “healthy building” priority outlined in the “operations recommendations”.

# Integration of Survey Data into Design Work

The design process is addressing the above findings in the following ways:

**Support special needs:** This is addressed in the “healthy building” priority outlined in the “operations recommendations”.

**Environmentally Friendly buildings that maximize natural light:** This is addressed in the “healthy building” priority outlined in the “operations recommendations” and “repair” and “efficiency recommendations.”

**Space for athletic Programs:** This is addressed in the “healthy building” and “Outdoor Learning & Play” priorities outlined in the “operations recommendations”.

**Modern learning environment:** This is addressed in the “Safety and Security”, “healthy building”, “Gathering & Collaboration Hubs”, “Cafeteria Improvements”, “Agile Flexible Classrooms”, “Layout Modifications”, and “Outdoor Learning & Play” priorities outlined in the “operations recommendations”.

# Space – Oversized, undersized and spaces



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# Overall Building Square Footage Analysis - ALL

## Overall Building Square Footage Analysis

The table is an analysis of the size of the existing buildings and the quantity of square footage per student compared to the Maine Department of Education (MDOE) Guidelines per school type and the average square footage per student compared to State Funded Schools in the past 10 years.

The student population and projected population are derived from the CESD School Year 2023-24 Enrollment Project Report.

|  | SF/ STUDENT | POND COVE ELEMENTARY SCHOOL | CAPE ELIZABETH MIDDLE SCHOOL | CAPE ELIZABETH HIGH SCHOOL |
|--|-------------|-----------------------------|------------------------------|----------------------------|
| <b>2023-2024 Student Population</b>                      |             |                             |                              |                            |
| Not Including contingency of 3%                          |             | 540                         | 444                          | 513                        |
| Including contingency of 3%                              |             | 557                         | 458                          | 529                        |
| <b>2032-2034 Projected Student Population</b>            |             |                             |                              |                            |
| Not Including contingency of 3%                          |             | 590                         | 520                          | 516                        |
| Including contingency of 3%                              |             | 608                         | 536                          | 532                        |
| <b>Approximate Existing Gross Square Footage (GSF)</b>   |             |                             |                              | 166,020                    |
| ES only space  |             | 66,731                      |                              |                            |
| MS only space  |             |                             | 93,111                       |                            |
| Shared MS/ES space                                       |             | 11,887                      | 11,887                       |                            |
| <b>TOTAL</b>   |             | <b>78,618</b>               | <b>104,998</b>               |                            |
| <b>Square Footage Per Student</b>                        |             | 120                         | 204                          | 314                        |
| Including shared space                                   |             | 146                         | 237                          |                            |
| <b>Projected Square Footage Per Student</b>              |             | 110                         | 174                          | 313                        |
| Including shared space                                   |             | 134                         | 196                          |                            |
| <b>DOE SF Guidelines (ES, MS, HS)</b>                    |             |                             |                              |                            |
| ES Gross Square Footage                                  | 140         | 85,120                      |                              |                            |
| Average State GSF past 10 years (state and local funds)* | 161         | 97,888                      |                              |                            |
| MS Gross Square Footage                                  | 160         |                             | 85,760                       |                            |
| Average State GSF past 10 years (state and local funds)* | 196         |                             | 105,056                      |                            |
| HS Gross Square Footage                                  | 180         |                             |                              | 95,760                     |
| Average State GSF past 10 years (state and local funds)* | 211         |                             |                              | 112,252                    |
| <b>Delta DOE Guidelines</b>                              |             | -6,502                      | 19,238                       | 70,260                     |
| <b>Delta State School 10 Yr Avg.</b>                     |             | -19,270                     | -58                          | 53,768                     |
| <b>% Circulation</b>                                     |             | 24%                         | 23%                          | 16%                        |

\* Per document 2023.1.20MeStSchoolDetailed Cost Data 3.1.2021. MS in last 10 years is South Portland. Does not include Windham middle school as school approved after current version of spreadsheet. Windham Middle school is approximately 223sf/student

# Overall Building Square Footage Analysis - PCES

## Pond Cove Elementary School (PCES):

is below the MDOE Guidelines Overall Square footage and overall square footage based on the average sf / student for state funded elementary schools within the past 10 years. Pond Cove Elementary School is at or below the MDOE guidelines of 140gsf per elementary student today and is projected to be below the guideline in year 2032-2033.

|  | SF/ STUDENT | POND COVE ELEMENTARY SCHOOL |
|--|-------------|-----------------------------|
| <b>2023-2024 Student Population</b>                      |             |                             |
| Not Including contingency of 3%                          |             | 540                         |
| Including contingency of 3%                              |             | 557                         |
| <b>2032-2034 Projected Student Population</b>            |             |                             |
| Not Including contingency of 3%                          |             | 590                         |
| Including contingency of 3%                              |             | 608                         |
| <b>Approximate Existing Gross Square Footage (GSF)</b>   |             |                             |
| ES only space  |             | 66,731                      |
| MS only space  |             |                             |
| Shared MS/ES space                                       |             | 11,887                      |
| <b>TOTAL</b>   |             | <b>78,618</b>               |
| <b>Square Footage Per Student</b>                        |             |                             |
| Including shared space                                   |             | 120                         |
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| <b>Projected Square Footage Per Student</b>              |             |                             |
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| Including shared space                                   |             | 134                         |
| <b>DOE SF Guidelines (ES, MS, HS)</b>                    |             |                             |
| ES Gross Square Footage                                  | 140         | 85,120                      |
| Average State GSF past 10 years (state and local funds)* | 161         | 97,888                      |
| MS Gross Square Footage                                  | 160         |                             |
| Average State GSF past 10 years (state and local funds)* | 196         |                             |
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| <b>Delta DOE Guidelines</b>                              |             |                             |
|  |             | -6,502                      |
| <b>Delta State School 10 Yr Avg.</b>                     |             |                             |
|  |             | -19,270                     |
| <b>% Circulation</b>                                     |             |                             |
|  |             | 24%                         |

# Overall Building Square Footage Analysis - CEMS

## Cape Elizabeth Middle School (CEMS):

is above the MDOE Guidelines Overall Square footage and below the overall square footage based on the average sf / student for state funded middle schools within the past 10 years. Today the Cape Elizabeth Middle School is above the MDOE Guidelines of 160gsf per student and the 196gsf per student per the average state funded middle schools in the past 10 years. In year 2033-2034 the Cape Elizabeth Middle School will be above the MDOE Guidelines of 160gsf per middle school student but at or below the 196gsf per middle school student per the average state funded middle school in the past ten years.

|  | SF/ STUDENT | CAPE ELIZABETH MIDDLE SCHOOL |
|--|-------------|------------------------------|
| <b>2023-2024 Student Population</b>                      |             |                              |
| Not Including contingency of 3%                          |             | 444                          |
| Including contingency of 3%                              |             | 458                          |
| <b>2032-2034 Projected Student Population</b>            |             |                              |
| Not Including contingency of 3%                          |             | 520                          |
| Including contingency of 3%                              |             | 536                          |
| <b>Approximate Existing Gross Square Footage (GSF)</b>   |             |                              |
| ES only space  |             |                              |
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| Shared MS/ES space                                       |             | 11,887                       |
| <b>TOTAL</b>   |             | <b>104,998</b>               |
| <b>Square Footage Per Student</b>                        |             |                              |
| Including shared space                                   |             | 204                          |
|  |             | 237                          |
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| <b>Delta DOE Guidelines</b>                              |             |                              |
|  |             | 19,238                       |
| <b>Delta State School 10 Yr Avg.</b>                     |             |                              |
|  |             | -58                          |
| <b>% Circulation</b>                                     |             |                              |
|  |             | 23%                          |

# Overall Building Square Footage Analysis - CEHS

**Cape Elizabeth High School (CEHS):** is above the MDOE Guidelines and the overall square footage based on the average sf / student for state funded high schools within the past 10 years. Today the Cape Elizabeth High School is above the MDOE Guidelines of 180gsf per student and the 211gsf per student per the average state funded high schools in the past 10 years. In year 2033-2034 the Cape Elizabeth High School will be above the MDOE Guidelines of 160gsf per middle school student and the 211gsf per high school student per the average state funded high school in the past ten years. The high school sf does not include the pool and has the lowest percentage of circulation when compared to Pond Cove and the Middle School.

|  | SF/ STUDENT | CAPE ELIZABETH HIGH SCHOOL |
|--|-------------|----------------------------|
| <b>2023-2024 Student Population</b>                      |             |                            |
| Not Including contingency of 3%                          |             | 513                        |
| Including contingency of 3%                              |             | 529                        |
| <b>2032-2034 Projected Student Population</b>            |             |                            |
| Not Including contingency of 3%                          |             | 516                        |
| Including contingency of 3%                              |             | 532                        |
| <b>Approximate Existing Gross Square Footage (GSF)</b>   |             |                            |
| ES only space  |             | 166,020                    |
| MS only space  |             |                            |
| Shared MS/ES space                                       |             |                            |
| <b>TOTAL</b>   |             |                            |
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| Including shared space                                   |             | 314                        |
| <b>Projected Square Footage Per Student</b>              |             |                            |
| Including shared space                                   |             | 313                        |
| <b>DOE SF Guidelines (ES, MS, HS)</b>                    |             |                            |
| ES Gross Square Footage                                  | 140         |                            |
| Average State GSF past 10 years (state and local funds)* | 161         |                            |
| MS Gross Square Footage                                  | 160         |                            |
| Average State GSF past 10 years (state and local funds)* | 196         |                            |
| HS Gross Square Footage                                  | 180         | 95,760                     |
| Average State GSF past 10 years (state and local funds)* | 211         | 112,252                    |
| <b>Delta DOE Guidelines</b>                              |             |                            |
| Delta State School 10 Yr Avg.                            |             | 70,260                     |
|  |             | 53,768                     |
| <b>% Circulation</b>                                     |             |                            |
|  |             | 16%                        |

## OVERALL FINDINGS

- Based on **overall square footage per student** population the **High School is the least efficient** and the **Elementary School is the most efficient.**
- Based on **percentage of circulation** to overall square footage the **High School is the most efficient.** The **compact layout of the High School** and **sprawling nature of PCES and CEMS** due to the **horizontal additions over time** directly impact the **circulation efficiency** as it relates to square footage.

# Size of Existing Program Spaces - ALL

The table summarizes the space deficiencies for each of the three schools.

- Red = most deficient.
- Orange = some areas in fair condition and some in deficient.
- Yellow = moderate deficiency.
- Green cells = appropriately sized, or in some cases above the guidelines.

| SPACE ALLOCATION WORKBOOK (SAW) SUMMARY - EXCLUDING MISSING PROGRAM SPACES |                   |  |  |  |
|--|-------------------|--|--|--|
|  | QTY OF CLASSROOMS | POND COVE ELEMENTARY SCHOOL  | CAPE ELIZABTH MIDDLE SCHOOL  | CAPE ELIZABETH HIGH SCHOOL   |
| Administration   |                   | Majority of the spaces are within the range but under typical sf for program use   | Majority of the spaces fall within the range of DOE guidelines. Layout/ organization does not promote collaboration and workrooms are undersized.                  | Undersized compared to DOE guidelines- Conference rooms and offices undersized and number of teacher workrooms do not appear adequate. |
| Guidance   |                   | Majority of spaces are within DOE Guidelines. Several may be larger than typical spaces in recent schools. Owner to confirm qty of people that meet in each space.                           | Majority of spaces are within DOE Guidelines. Several may be larger than typical spaces in recent schools. Owner to confirm qty of people that meet in each space. | Conference room undersized   |
| Clinic   |                   | Below the DOE Guidelines   | Below the DOE Guidelines   | Space fall within the range of the DOE Guidelines. Many current Clinics have an exam room and shower which this space does not.        |
| Classrooms   |                   |  |  |  |
| Kindergarten   | 6                 | All Kindergarten Classrooms are below the DOE Guidelines by approximatley 20%. Number of students per room are within School Board range. Will exceed range based on projections in '33-'34. |  |  |
| 1st Grade  | 7                 | All first grade classrooms are below the DOE Guidelines. Determine if size of classroom supports collaboration for he number of students per classroom.                                      |  |  |
| 2nd Grade  | 6                 | All first grade classrooms are below the DOE Guidelines. Determine if size of classroom supports collaboration for he number of students per classroom.                                      |  |  |
| 3rd Grade  | 6                 | All first grade classrooms are below the DOE Guidelines. Determine if size of classroom supports collaboration for he number of students per classroom.                                      |  |  |
| 4th Grade  | 5                 | Majority of Classrooms meet the DOE Guidelines. Will be 2 students beyond the School Board Range of 19-23, or 10 total requiring one additional classroom.                                   |  |  |
| <b>SUBTOTAL ES</b>   | <b>30</b>         | <b>NEED ADDITIONAL CLASSROOM</b>   |  |  |



# Size of Existing Program Spaces - ALL

## CLASSROOMS

- Almost all classrooms in grades Kindergarten through 12th grade are below the MDOE guidelines.
- Biggest delta in the Middle School and then the Elementary School.
- The Kindergarten classrooms represent the largest grade level delta at approximately 20% below the MDOE Guidelines.

| SPACE ALLOCATION WORKBOOK (SAW) SUMMARY - EXCLUDING MISSING PROGRAM SPACES |                   |                             |   |   |
|--|-------------------|-----------------------------|---|---|
|  | QTY OF CLASSROOMS | POND COVE ELEMENTARY SCHOOL | CAPE ELIZABTH MIDDLE SCHOOL   | CAPE ELIZABETH HIGH SCHOOL  |
| 5th Grade  | 6                 |                             | All Classrooms are below the DOE Guidelines. Overall the 5th-8th grade classrooms are undersized by approximately 2,750sf. The 5th Grade has 6 classrooms and will be within the School Board Range of 20-24.   |   |
| 6th Grade  | 5                 |                             | All Classrooms are below the DOE Guidelines. Overall the 5th-8th grade classrooms are undersized by approximately 2,750sf. The 6th grade currently has 5 classrooms. It is projected in '33-'34 each of the 5 classrooms will be 7 students beyond the School Board Range of 20-24, or 35 total requiring two additional classroom. |   |
| 7th Grade  | 6                 |                             | All Classrooms are below the DOE Guidelines. Overall the 5th-8th grade classrooms are undersized by approximately 2,750sf. 7th Grade has 6 classrooms and will be at or just below the School Board Range of 20-24 now and in the future.   |   |
| 8th Grade  | 6                 |                             | All Classrooms are below the DOE Guidelines. Overall the 5th-8th grade classrooms are undersized by approximately 2,750sf. 8th Grade has 6 classrooms and will be below or withint the School Board Range of 20-24 now and in the future.   |   |
| <b>SUBTOTAL MS</b>   | <b>23</b>         |                             | <b>NEED TWO ADDITIONAL CLASSROOMS</b>   |   |
| 9th Grade  |                   |                             |   | Classrooms range from 581 sf to 997 sf. Avearge Classroom size for full classrooms is 762sf. This is below the guidelines of 800sf. Overall the total classrooms undersized by over 1100sf. |
| 10th Grade   |                   |                             |   |   |
| 11th Grade   |                   |                             |   |   |
| 12th Grade   |                   |                             |   |   |
| Science  |                   |                             | Analysis assumes STEM program similar to DOE Guidelines for Science (900sf). Spaces below DOE Guidelines.   | High School Science Classrooms range from 950 sf to 1440 sf. Avearge Classroom size for Science classrooms is 1148sf. This is within the range of the guidelines of 900 - 1200sf.           |

# Size of Existing Program Spaces - ALL

## LIBRARY AND FOODSERIVCE:

- The ES and MS Library spaces and Food Service spaces are significantly below the MDOE standards for the ES and MS population
- High School is significantly over the MDOE guidelines for the student population.

## MUSIC AND ART:

The unified arts, both art and music, are 20-35% below the MDOE guidelines at the ES for the population.

| SPACE ALLOCATION WORKBOOK (SAW) SUMMARY - EXCLUDING MISSING PROGRAM SPACES |                   |  |  |   |
|--|-------------------|--|--|---|
|  | QTY OF CLASSROOMS | POND COVE ELEMENTARY SCHOOL  | CAPE ELIZABTH MIDDLE SCHOOL  | CAPE ELIZABETH HIGH SCHOOL  |
| Instructional Coaches  |                   |  |  | Within the DOE guidelines of a small classroom 300-600sf.   |
| Special Services   |                   | Several SPED Classrooms appear to be below what we typically see for program space.        | Spaces vary depending on program. Appear to be within or below DOE guidelines for special services of 250 -800 sf. Confirmation of number of people in space required for several spaces to confirm if adquatly sized.   | Spaces vary depending on program. Appear to be within or below DOE guidelines for special services of 250 -800 sf. Confirmation of number of people in space required for several spaces to confirm if adquatly sized.  |
| Unified Arts   |                   | Music and Art are below the DOE guidelines by approximately 20-35%.                        | The majority of the spaces fall within the DOE guidelines with two exceptions. F109 Music instruction is significantly undersized (confirmed it is utilized as Practice area and not just classroom instruction) and G140 Computer Science is about 20% than DOE Guidelines. | The majority of the spaces fall within the DOE guidelines with two exceptions. C137 Ensemble/Chorus is significantly undersized and A101 Auditorium is about 35% larger than what would be supported by the DOE. DOE supports spaces for 1/3 of the student body. |
| Library  |                   | Library support spaces below DOE guidelines by approximately 80%                           | Library is below DOE Guidelines by 20%   | The library, student useable and non useable, spaces exceed the DOE guidelines for the current and projected population by 200%. Libraries in recent schools are typically the "heart" of the school building and more centrally located and visible.             |
| Food Services  |                   | The Cafeteria is below the DOE Guidelines by 25% for the joint population of the ES and MS | The Cafeteria is below the DOE Guidelines by 25% for the joint population of the ES and MS   | The Cafeteria space exceeds the DOE guidelines for the current and projected population by more than 200%.  |
| Physical Education   |                   | The Gymnasium is within the DOE Guidelines   | The Gymnasium is above DOE Guidelines by approximately 10%   | The Gymnasium space exceeds the DOE guidelines for high schools and bleachers seating for the current and projected full student body by approximately 25%.   |
| Miscellaneous  |                   | Shared space is undersized for use   | There are some program specific spaces in the Lower Level of MS  | One of the technology spaces exceed the DOE guidelines by 200%  |

# Summary of Missing Spaces- ALL

Based on meetings with the leadership group and multiple meetings with the principals the following have been identified as missing spaces. These are not listed in the existing space allocation workbook but will need to be considered as we explore options.

| SUMMARY OF MISSING SPACES           |  |                 |
|-------------------------------------|--|-----------------|
| APPROXIMATE SPACE NEEDED            |  | APPROX. SQ. FT. |
| <b>POND COVE ELEMENTARY SCHOOL</b>  |  |                 |
| 1                                   | STEM/Makerspace for Technology Integrator  | 1,200 SF        |
| 1                                   | Separate space for Extended Learning Strategist (currently share with WL)  | 800 SF          |
| 1                                   | Gifted & Talented Room   | 800 SF          |
| 5                                   | Small Group/Intervention Spaces  | 250 SF EA       |
| 1                                   | Separate Cafeteria and Kitchen from MS   | 3950 SF         |
| 3                                   | 2-3 Additional Conference Rooms  | 250-400 SF      |
| 1                                   | Gathering/Assembly Space (1 to 2 Grades)   | 3000 sf         |
| 1                                   | Behavior Analyst Office  | 100 SF          |
| 1                                   | Response to Intervention (RTI) suite with shared and private spaces (2 Teachers, 3 Ed Techs, 4-6 Students per Teacher) | 1200 SF         |
| 5                                   | 1:1 Student Meeting Space  | 100 SF EA       |
|                                     | APPROXIMATE SUB TOTAL  | 14,000 SF       |
| <b>CAPE ELIZABETH MIDDLE SCHOOL</b> |  |                 |
| 1                                   | Team Space (close to classrooms)   | 3000 SF         |
| 1                                   | Separate Cafeteria from ES   | (SEE ES)        |
| 1                                   | Clear Main Entrance with Admin   | 1000 SF         |
| 1                                   | Tech Integration Teacher Space   | 800 SF          |
|                                     | APPROXIMATE SUB TOTAL  | 4,800 SF        |
| <b>CAPE ELIZABETH HIGH SCHOOL</b>   |  |                 |
| 1                                   | Student Lounge (look to create in lower lobby space)   | 800 SF          |
| 1                                   | Black Box/Multipurpose Space (could be used for testing 80-85 students)  | 1250 SF         |
| 1                                   | Additional Locker Room   | 800 SF          |
| 4                                   | Breakout Spaces  | 250 SF EA       |
| 1                                   | Restrooms at Hannaford Field   | 1000-2000 SF    |
|                                     | APPROXIMATE SUB TOTAL  | 4250 SF         |
|                                     | TOTAL  | 23,050          |

# Energy - School department utilities and usage



5

# Energy Use All Schools

## 12 Month Utility - Oil 2022-2023

| SF | Usage Gal. | KBTU      | Rate \$/Gal. | Cost \$ | Cost/SQ   |        |
|----|------------|-----------|--------------|---------|-----------|--------|
| ES | 72,675     | 22,011.96 | 3,059,662    | \$2.92  | \$64,193  | \$0.88 |
| MS | 99054.5    | 30,002.04 | 4,170,284    | \$2.92  | \$87,495  | \$0.88 |
| HS | 152,736    | 68,731.60 | 9,553,692    | \$2.92  | \$200,442 | \$1.31 |

## 12 Month Utility - Propane 2022-2023

| SF              | Usage Gal. | KBTU      | Rate \$/Gal. | Cost \$ | Cost/SQ  |        |
|-----------------|------------|-----------|--------------|---------|----------|--------|
| ES              | 72,675     | 1,224.76  | 112,066      | \$1.67  | \$2,045  | \$0.03 |
| MS              | 99054.5    | 1,669.34  | 152,744      | \$1.67  | \$2,788  | \$0.03 |
| HS <sup>5</sup> | 152,736    | 24,335.30 | 2,226,680    | \$1.67  | \$40,640 | \$0.27 |

## 12 Month Utility - Electrical 2022-2023

| SF | Usage kWh | KBTU      | Rate \$/kWh | Cost \$ | Cost/SQ   |        |
|----|-----------|-----------|-------------|---------|-----------|--------|
| ES | 72,675    | 403,818   | 1,377,885   | \$0.159 | \$64,234  | \$0.88 |
| MS | 99054.5   | 550,399   | 1,878,041   | \$0.159 | \$87,550  | \$0.88 |
| HS | 152,736   | 1,063,712 | 3,629,536   | \$0.159 | \$169,201 | \$1.11 |

## 12 Month Utility - Fuel (elec, propane and oil) 2022-2023

| SF      | KBTU    | EUI        | Cost \$ | Cost/SQ   |        |
|---------|---------|------------|---------|-----------|--------|
| ES / MS | 171,729 | 10,750,682 | 62.6    | \$130,473 | \$0.76 |
| HS      | 152,736 | 13,183,228 | 86.3    | \$369,643 | \$2.42 |

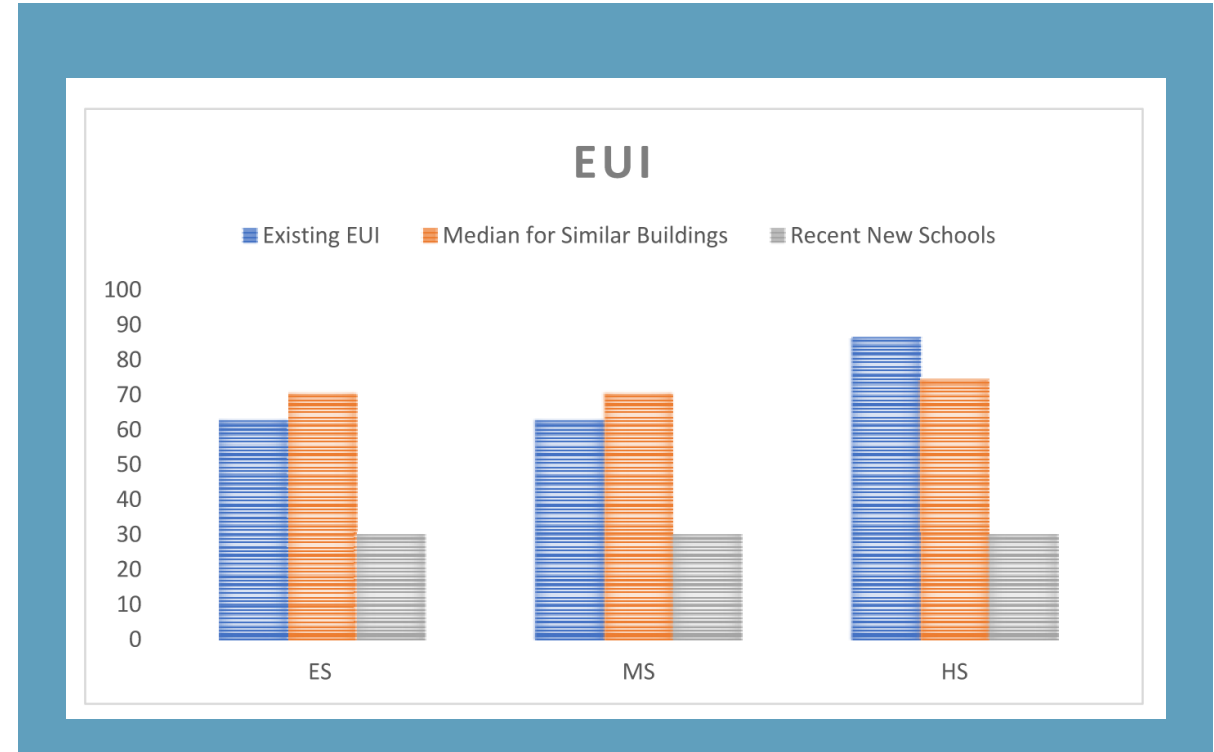
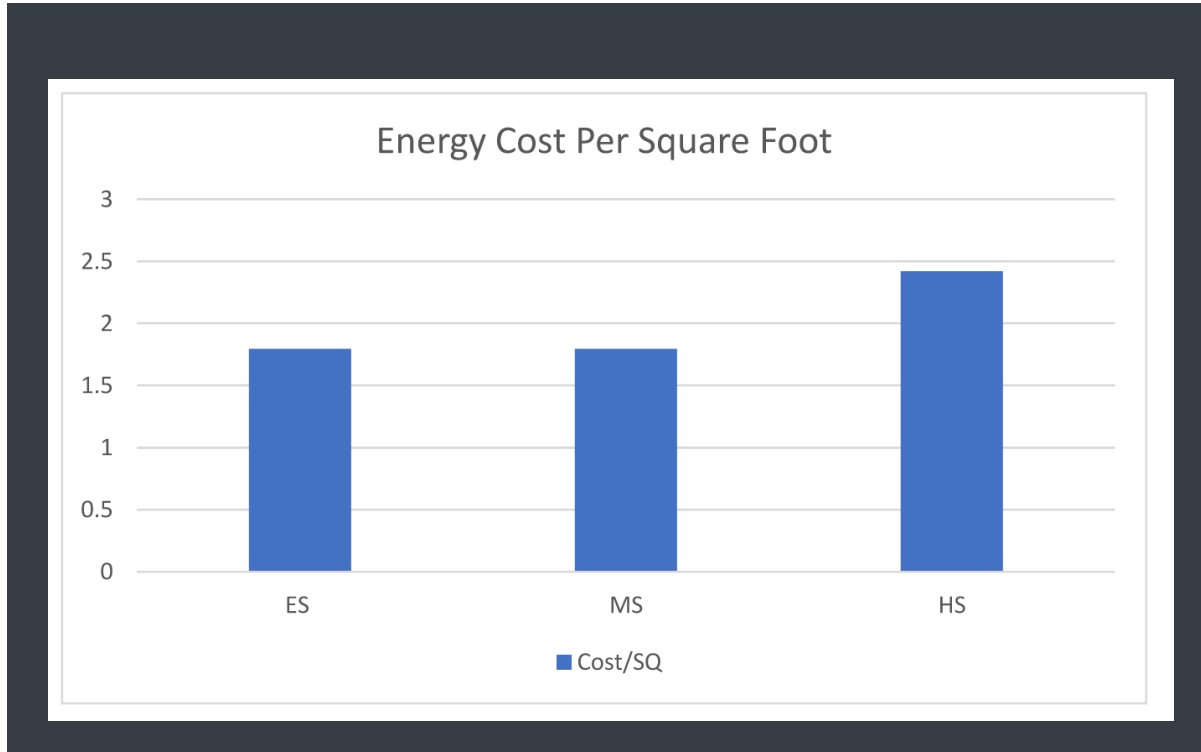
## 12 Month Utility - Fuel (elec, propane and oil) 2022-2023

| School | SF      | KBTU       | Existing EL Cost \$ | Cost/SQ   |        |
|--------|---------|------------|---------------------|-----------|--------|
| ES     | 72,675  | 4,549,613  | 62.6                | \$130,473 | \$1.80 |
| MS     | 99054.5 | 6,201,069  | 62.6                | \$177,833 | \$1.80 |
| HS     | 152,736 | 13,183,228 | 86.3                | \$369,643 | \$2.42 |

- Assumes 1 gallon of No.2 Oil equals 139,000 BTUs
- Assumes 1 gallon of propane equals 91,500 BTUs
- Assumes 1 kWh equals 3,412 BTUs
- Assumes propane costs are attributed to the pool and are not included in high school costs.
- The following rates were provided by the district:
 

|                   |   |
|-------------------|---|
| Oil/ gallon       | \$2.92                                  |
| Propane/gallon    | \$1.67                                  |
| Electricity / KWH | \$0.16 calculated based on historic use |
- ES and MS separate usage is determined based on determined overall usage / sf and multiplying by ES or MS sf.

# Cost / SF and EUI – Energy Unit Intensity



**EUI**, or Energy Use Intensity of each building compared to the median of similar buildings is illustrated in the chart on the right. *The EUI is the equivalent to miles / gallon for cars. It is the energy use per square foot of a building.*

- MEDIAN EUI - PER ENERGY STAR PORTFOLIO MANAGER
- Median EUI for a similar MS/ES building is 70.2
- Median EUI for a similar high school building is 74.4
- Recently designed RSU 10 PK-8 School in Mexico Maine – EUI 26.1
- Recent MDOE EUI mid to upper 20s.
- For reference you target 25 for Net Zero school design.

# Next Steps



# Next Steps

## Future Community Forum Topics for 2024 :

- **Preliminary Options –DATES:**
- **Preferred Options – DATES:**
- **Selected Option – DATES:**

## Final Conceptual Design Presentation:

- **Targeted Late June 2024**

New project website is live!

Visit: [www.CEBuildingProject.com](http://www.CEBuildingProject.com)

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- **Volunteer to assist with communications and outreach**

**NEXT MTG: JANUARY 4, 2024**

